

CLAIMS

1. A method for making microcomponents (76, 102) exhibiting microreliefs of an optical quality, in a substrate (62, 82, 92) comprising of:

- a first step for making the desired microrelief (70, 72, 74; 80, 82; 100) by mechanical machining of the substrate, and
- simultaneously with the first step or after the latter, a second step for cutting out the microcomponents in the substrate.

2. A method according to claim 1, the first mechanical machining step comprising at least two substeps: a first substep for blank-forming and a second substep for finishing.

3. A method according to claim 1 or 2, the first step further comprising a step for obtaining optical quality for the microrelief.

4. A method according to any of claims 1 to 3, the microrelief being made with a single tool (68, 78) moved at the surface of the substrate.

5. A method according to any of claims 1 to 3, the microrelief being made by several tools (88, 98) working simultaneously and/or in succession.

6. A method according to any of claims 1 to 5, the microrelief being made with a saw moved along one direction at a time.

7. A method according to any of claims 1 to 5, the microcomponents being microprisms (80, 100).

8. A method according to claim 7, the microprisms  
5 being made by using a "V" profile abrasive blade (78).

9. A method according to claim 6, the saw having a blade with plane and parallel faces, or having at least an inclined face.

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10. A method according to any of the preceding claims, the first step consisting of passing a blade without any abrasive grit in its die, this blade being used as carrier for a separate polishing abrasive  
15 distributed in the microreliefs.

11. A method according to any of the preceding claims, the first step further comprising a surface chemical etching of the substrate.

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12. A method according to any of claims 1 to 10, the first step further consisting of forming a planarizing coating on the substrate.

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13. A method according to any of claims 1 to 7, consisting of using a "U" shaped blade with the side parts comprising first abrasive grits and the end comprising second abrasive grits with a larger particle size than the former.

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Add a)  
ADD B4) and C4) Add D3)